

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended)

A method for storage of non-sequential data, comprising:

coding the non-sequential data to a coding pattern, the coding pattern ~~including comprising subsequences of~~ at least one sequence with symbols which ~~have~~ has the characteristic that an arbitrary subsequence of a predetermined magnitude of the sequence is unique within the sequence and unambiguously defines a position of the subsequence in the sequence; and  
reproducing the coding pattern on a product.

Claim 2. (Currently amended)

The method of claim 1 further comprising:

converting the non-sequential data into a set of data values, ~~having a~~  
arranging the coding pattern arranged so as to comprise sequence portions of said at least one sequence ~~in a coding pattern~~, said sequence portions being at least of the same magnitude as the subsequences of a predetermined magnitude, so that each of the data values is coded by a group each of at least two sequence portions in the coding pattern.

Claim 3. (Currently amended)

The method of claim 1 further comprising:

converting the non-sequential data into a set of data values, ~~having a~~  
arranging the coding pattern ~~arranged~~ so as to comprise sequence portions of  
said at least one sequence ~~in a coding pattern~~, said sequence portions being of  
the same magnitude as the subsequences of a predetermined magnitude, so  
that each of the data values is coded by one sequence portion in the coding  
pattern.

Claim 4. (Original)

The method of claim 2, wherein the non-sequential data is coded with  
only one sequence, wherein the position of a subsequence in the sequences  
constitutes a sequence value, and wherein a relationship between the sequence  
values from different sequence portions defines the data values.

Claim 5. (Original)

The method of claim 4, wherein each of the data values is defined by a  
difference between the sequence values for two subsequences from different  
sequence portions.

Claim 6. (Currently amended)

The method of claim 5, wherein the sequence portions are juxtaposed in  
the coding pattern ~~comprising to form~~ a matrix in such manner that each of  
the data values is defined by a difference between the sequence values of two

adjoining subsequences from corresponding parts of the sequence portions in the coding pattern.

Claim 7. (Original)

The method of claim 6, wherein the sequence portions also code at least part of a position value which defines a serial number of the sequence portion.

Claim 8. (Original)

The method of claim 1, wherein the non-sequential data comprises characters and wherein the characters are converted into data values.

Claim 9. (Original)

The method of claim 1, wherein the non-sequential product comprises at least one of the following: a sheet of paper, a book cover, a page of a book, a magazine cover, a magazine page, a newspaper page, and a bulletin board.

Claim 10. (Currently Amended)

A system for the storage of non-sequential data, comprising:

a component for coding the non-sequential data to a coding pattern, the coding pattern comprising subsequences of at least one sequence with symbols which ~~have~~ has the characteristic that an arbitrary subsequence of a

predetermined magnitude of the sequence is unique within the sequence and  
un-ambiguously defines the position of the subsequence in the sequence; and  
a component for reproducing the coding pattern on a product.

Claim 11. (Currently amended)

The system of claim 10 further comprising:

a component for converting the non-sequential data into a set of data  
values, and a component for having arranging the coding a pattern ~~arranged~~  
so as to comprise sequence portions of said at least one sequence ~~in a coding~~  
~~pattern~~, said sequence portions being at least of the same magnitude as the  
subsequences of a predetermined magnitude, so that each of the data values is  
coded by a group each of at least two sequence portions in the coding pattern.

Claim 12. (Original)

The system of claim 11, wherein the non-sequential data is coded with  
only one sequence, wherein a position of a subsequence in the sequences  
constitutes a sequence value, and wherein a relationship between the sequence  
values from different sequence portions defines the data values.

Claim 13. (Original)

The system of claim 12, wherein each of the data values is

defined by a difference between the sequence values for two subsequences from different sequence portions.

Claim 14. (Original)

The system of claim 13, wherein the sequence portions are juxtaposed in the coding pattern ~~comprising~~ to form a matrix in such manner that each of the data values is defined by a difference between the sequence values of two adjoining subsequences from corresponding parts of the sequence portions in the coding pattern.

Claim 15. (Original)

The system of claim 14, wherein the sequence portions also code at least part of a position value which defines a serial number of the sequence portion.

Claim 16. (Original)

The system of claim 10, wherein the non-sequential data comprises characters and wherein the characters are converted into data values.

Claim 17. (Original)

The system of claim 10, wherein the product comprises at least one of the following: a sheet of paper, a book cover, a page of a book, a magazine cover, a magazine page, a newspaper page, and a bulletin board.

Claim 18. (Currently Amended)

A system for storing non-sequential data, comprising:

a product; and

a coding pattern placed on the product in which the non-sequential data is stored, the coding pattern including sequence portions with symbols, each sequence portion including at least a subsequence of a sequence which is arranged so that an arbitrary subsequence of a predetermined magnitude of the sequence is unique within the sequence and unambiguously defines a position of the subsequence in the sequence.

Claim 19. (Currently amended)

The system of claim 18, wherein the coding pattern codes a set of data values, each of the data values ~~encoding~~ being coded by a group of sequence portions consisting of at least two sequence portions.

Claim 20. (Original)

The system of claim 18, wherein the symbols consist of markings, the size of the markings defining a value of the symbol.

Claim 21. (Original)

The system of claim 18, wherein each of the symbols comprises a raster point and a marking, the value of each symbol being indicated by a position of said marking in relation to the raster point.

Claim 22. (Original)

The system of claim 18, wherein the product comprises at least one of the following: a sheet of paper, a book cover, a page of a book, a magazine cover, a magazine page, a newspaper page, and a bulletin board.

Claim 23. (Original)

The system of claim 18, wherein the coding pattern codes text.

Claim 24. (Original)

The system of claim 18, wherein the coding pattern codes a command.

Claim 25. (Currently Amended)

An apparatus for optically recording information, comprising:  
an image sensor adapted to optically record an image from a surface; and  
a processor configured to convert the image into non-sequential data, the image comprising a predetermined number of subsequences with symbols, each of the subsequences uniquely and unambiguously corresponding to a

position in a predetermined sequence which is arranged in such manner that an arbitrary subsequence of a predetermined magnitude is unique within the sequence and unambiguously defines a position in the sequence.

Claim 26. (Original)

The apparatus of claim 25, further comprising a display adapted to show the data.

Claim 27. (Original)

The apparatus of claim 25, further comprising a loudspeaker adapted to transmit sounds corresponding to the data.

Claim 28. (Original)

The apparatus of claim 25, wherein the processor is further configured to convert the symbols into subsequences with values, to convert the subsequences with values into sequence values, to calculate difference values as the difference between the sequence values, to convert the difference values into data values, and to convert the data values into data.

Claim 29. (Original)

The apparatus of claim 28, wherein at least one of the difference values is used to determine relative positions of the subsequences.



Claim 30. (Original)

The apparatus of claim 29, wherein the relative position of the subsequences is used to decide whether data corresponding to a data value has been previously recorded.

Claim 31. (Currently Amended)

A coding pattern data structure for storage of text, comprising:

a plurality of symbols;

a plurality of sequence portions comprising the plurality of symbols, each sequence portion comprising at least a subsequence of a sequence which is arranged in such manner that an arbitrary subsequence of a predetermined magnitude of the sequence is unique within the sequence and unambiguously defines the position of the subsequence in the sequence; and

a coding pattern including at least one sequence portion.

Claim 32. (Original)

The coding pattern data structure of claim 31, wherein each of the symbols includes a raster point and a marking, a value of each symbol being indicated by a position of said marking in relation to the raster point.

Claim 33. (Currently amended)

A system for processing optical information, the system comprising:  
a memory for storing computer-executable instructions; and  
a processor functionally coupled to the memory for executing the  
computer-executable instructions operable for:  
recording an input signal corresponding to an image, the image  
comprising a predetermined number of subsequences with symbols, each of  
the subsequences unambiguously corresponding to a position in a  
predetermined sequence which is arranged in such manner that an arbitrary  
subsequence of a predetermined magnitude is unique within the sequence and  
unambiguously defines a position in the sequence, and  
converting the predetermined number of subsequences into non-  
sequential data.

Claim 34. (Original)

The system of claim 33, wherein the computer-executable instructions  
cause the data to be presented on a display unit.

Claim 35. (Original)

The system of claim 33, further comprising a loudspeaker adapted to  
transmit sounds corresponding to the data.

Claim 36. (Currently Amended)

A computer-readable memory medium, having computer-executable modules, comprising:

a component for recording an input signal corresponding to an image including a predetermined number of subsequences with symbols; and

a component for converting the predetermined number of subsequences into data ~~such that~~ by determining the unique and unambiguous position of each of the subsequences ~~unambiguously corresponding to a position in a~~ predetermined sequence which is arranged in such manner that an arbitrary subsequence of a predetermined magnitude is unique within the sequence and unambiguously defines a position in the sequence, and by converting the positions of the subsequences in the sequence to non-sequential data.

Claim 37. (Original)

The computer-readable memory medium of claim 36, wherein a program causes a computer to output a signal to a display unit for presentation of the data.

Claim 38. (Currently Amended)

A method for storage of non-sequential data, comprising:

using a coding pattern for storage of text, said coding pattern ~~consisting~~ comprised of sequence portions with symbols which each include at least a subsequence of a sequence which is arranged in such manner that an arbitrary subsequence of a predetermined magnitude of the sequence is unique within

the sequence and unambiguously defines the position of the subsequence in the sequence.

Claim 39. (Currently Amended)

A method for storage of non-sequential data, comprising:

converting the non-sequential data into a set of data values;

coding the non-sequential data coding the data values to a coding pattern by means of at least one sequence with symbols, ~~such that~~ in which sequence any arbitrary subsequence of a predetermined magnitude of the sequence is unique and unambiguously defines a position of the subsequence in the sequence, the coding pattern being arranged so as to comprise sequence portions of said at least one sequence ~~in a coding pattern~~, said sequence portions being at least of the same magnitude as the subsequences of a predetermined magnitude, wherein the sequence portions also code at least part of a position value which defines a serial number of the sequence portion; and

reproducing the coding pattern on a product.

Claim 40. (Cancelled)

Claim 41. (New)

The method of claim 1, further comprising coding position indications in the coding pattern.

Claim 42. (New)

The method of claim 1, further comprising coding a position sequence in said coding pattern, which position sequence indicates positions in the coding pattern, and which has the characteristic that an arbitrary subsequence of a predetermined magnitude of the position sequence uniquely and unambiguously defines a position of the subsequence in the position sequence.

Claim 43. (New)

The method of claim 42, wherein the position sequence indicates absolute positions of the subsequences in the intended reading direction of the coding pattern.

Claim 44. (New)

The system of claim 18, further comprising a component for coding position indications in the coding pattern.

Claim 45. (New)

The system of claim 18, wherein the coding pattern further comprises a position sequence in said coding pattern, which position sequence indicates positions in the coding pattern, and which has the characteristic that an arbitrary subsequence of a predetermined magnitude of the position sequence uniquely and unambiguously defines a position of the subsequence in the position sequence.

Claim 46. (New)

The system of claim 33, wherein the computer-executable instructions are further operable for decoding position indications for the non-sequential data from the subsequences in the image.

Claim 47. (New)

The computer-readable memory medium of claim 36, wherein the computer-executable modules further comprises a component for decoding position indications for the non-sequential data from the subsequences in the image.

Claim 48. (New)

The method of claim 38, wherein said sequence portions code a position sequence, which position sequence indicates positions along an intended reading direction of the coding pattern, and which position sequence has the characteristic that an arbitrary subsequence of a predetermined magnitude of

the position sequence uniquely and unambiguously defines a position of the subsequence in the position sequence.